1. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-72 + 77i}{5 + 3i}$$

A. $a \in [-18, -16.5]$ and $b \in [3.5, 5.5]$

B. $a \in [-15.5, -13]$ and $b \in [25, 26.5]$

C. $a \in [-6, -2.5]$ and $b \in [600.5, 602.5]$

D. $a \in [-6, -2.5]$ and $b \in [16, 19]$

E. $a \in [-130, -128]$ and $b \in [16, 19]$

---

2. Simplify the expression below and choose the interval the simplification is contained within.

$$2 - 14 \div 3 * 11 - (20 * 17)$$

A. $[-391.33, -387.33]$

B. $[337.58, 343.58]$

C. $[-341.42, -336.42]$

D. $[-1181.67, -1176.67]$

E. None of the above

---

3. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{441}{7}}$$

A. Integer

B. Irrational

C. Not a Real number

D. Rational

E. Whole

---

4. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{858}{6}} + 2i^2$$

A. Pure Imaginary

B. Not a Complex Number

C. Rational

D. Irrational

E. Nonreal Complex

---

5. Simplify the expression below and choose the interval the simplification is contained within.

$$3 - 17^2 + 15 \div 10 * 13 \div 16$$

A. $[-286.17, -285]$

B. $[291.99, 292.52]$

C. $[292.43, 293.37]$

D. $[-285.3, -284.01]$

E. None of the above

---

6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{18 - 44i}{8 + 5i}$$

A. $a \in [-76.5, -75.5]$ and $b \in [-6.5, -4]$

B. $a \in [1, 3.5]$ and $b \in [-9.5, -8.5]$

C. $a \in [-1.5, -0.5]$ and $b \in [-6.5, -4]$

D. $a \in [3.5, 6]$ and $b \in [-3.5, -2.5]$

E. $a \in [-1.5, -0.5]$ and $b \in [-443, -440]$

---

7. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{11664}{144}}$$

A. Integer

B. Rational

C. Irrational

D. Not a Real number

E. Whole

---

8. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-9 - 8i)(2 + 7i)$$

A. $a \in [38, 39]$ and $b \in [-79, -78]$

B. $a \in [-75, -69]$ and $b \in [-51, -46]$

C. $a \in [38, 39]$ and $b \in [74, 83]$

D. $a \in [-75, -69]$ and $b \in [43, 53]$

E. $a \in [-18, -15]$ and $b \in [-57, -52]$

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9. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{\sqrt{182}}{18} + \sqrt{-7}i$$

A. Not a Complex Number

B. Rational

C. Nonreal Complex

D. Irrational

E. Pure Imaginary

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10. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(6 + 4i)(8 + 9i)$$

A. $a \in [82, 91]$ and $b \in [-22, -19]$

B. $a \in [11, 18]$ and $b \in [83, 90]$

C. $a \in [11, 18]$ and $b \in [-89, -85]$

D. $a \in [82, 91]$ and $b \in [13, 24]$

E. $a \in [41, 51]$ and $b \in [33, 37]$
